

CLAIMS

1. Pneumatic brake booster, in particular for a motor vehicle, comprising a piston (22) mounted between a control rod (24) and a push rod (34), the control rod being terminated by a distributor plunger (28) guided translationally in a housing (48) of the piston, and a three-way valve (30) mounted in the piston (22) around the control rod (24) and comprising a shutter (56) engaging with a seat of the piston (22) and with a seat (70) of the distributor plunger (28), a cylindrical sleeve (46) mounted in an axially sliding manner in said housing (48) around the distributor plunger (28), and means (52) which permanently urge the sleeve (46) elastically toward the shutter (56) of the three-way valve in order to move this shutter away from its seat (70) on the distributor plunger (28) and thus to increase the supply of atmospheric air to a working chamber (16) of the booster, means (58, 58') for axially locking the sleeve (46) when the shutter (56) is in a moved-away position, and means (66) for unlocking the sleeve which are sensitive to the speed of movement of the control rod (24) and of the distributor plunger (28) in the direction of braking and which unlock the sleeve (46) when this speed is at least equal to a predetermined value, characterized in that the means for axially locking the sleeve (46) are arranged in the housing (48) of the piston between the distributor plunger (28) and the piston and comprise an elastically deformable element (58, 58') for retaining the sleeve (46), this element being mounted in an annular groove or slot in the body (42) of the piston (22).
2. Booster according to Claim 1, characterized in that a part (64) of the retaining element (58) bears on a ramp or oblique surface (66) of the distributor plunger (28) so that it can be moved away from said plunger and release the sleeve (46) when the

distributor plunger (28) is moved axially toward the push rod (34) with respect to the piston (22).

5 3. Booster according to Claim 1 or 2, characterized in that the retaining element (58) is formed by a spring steel wire stirrup comprising at least one kink housed in said groove in the housing (48) of the piston and at least one kink (62) housed in a notch or slot in the sleeve (46).

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4. Booster according to Claim 3, characterized in that the retaining element (58) comprises at least two opposed kinks (62) housed in notches or slots in the sleeve (46).

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5. Booster according to one of the preceding claims, characterized in that the sleeve (46) is able to slide axially in a sealed manner in the housing (48) of the piston (22).

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6. Booster according to one of the preceding claims, characterized in that the sleeve end rim (54) intended to be applied against the shutter (56) forms a sealing seat for the shutter.

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7. Booster according to one of Claims 1 to 6, characterized in that the retaining element (58) limits the axial movement of the sleeve (46) toward the shutter (56) of the three-way valve.

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8. Booster according to one of Claims 1 to 7, characterized in that it comprises means (72) borne by the piston (22) to limit the axial movement of the distributor plunger (28) with respect to the piston (22) toward the shutter (56) of the three-way valve and to define a rest position for the distributor plunger (28).

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9. Booster according to Claim 8, characterized in

that said movement-limiting means comprise a rod or a clip (72) engaged in openings (74, 76) in the cylindrical walls of the piston (22) and in the sleeve (46) and are able to move axially over a limited travel  
5 with respect to the piston (22).

10. Booster according to Claim 8 or 9, characterized in that said movement-limiting means (72) also form means for returning the sleeve (46) to an axial-locking  
10 position in the housing (48) of the piston, in which the sleeve (46) is moved away from the annular shutter (56) of the three-way valve.

11. Booster according to one of Claims 8 to 10,  
15 characterized in that the means (72) for limiting the movement and for defining a rest position for the distributor plunger (28) are substantially in the same transverse plane as the means (58') for axially locking the sleeve (46).

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12. Booster according to Claim 11, characterized in that the means (72) for limiting movement and for defining a rest position for the distributor plunger (28) and the means (58') for axially locking the sleeve  
25 (46) are mounted by elastic snap-fastening on the body (42) of the piston.

13. Booster according to one of the preceding claims, characterized in that a washer (80, 86, 94) is  
30 interposed with an axial clearance between the end of the distributor plunger (28) and a reaction disk (40) mounted between the piston (22) and the push rod (34), this washer (80, 86, 94) being housed in a recess (82) in the end of the piston (22) and being applied against  
35 the bottom of this recess in order to transmit a reaction force while the distributor plunger (28) is returning to a rest position or non-braking position.

14. Booster according to Claim 13, characterized in

that the washer (80) is a flat washer and transmits a reaction force to the piston (22).

5 15. Booster according to Claim 13, characterized in that the washer (86) is guided in axial translation in a ring (88) guided in axial translation in the recess (82), the ring having an axial length which is greater than that of the washer, and the washer (86) transmits a reaction force to the distributor plunger (28).

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16. Booster according to Claim 13, characterized in that the washer (94) comprises an axial cylindrical tail (96) which transmits a reaction force to the distributor plunger (28).